REMARKS

Claims 5 to 8 were rejected under 35 U.S.C. 102(b) as being anticipated by Arnold et al. (US 6,195,999 B1). Claims 5 and 7 were rejected under 35 U.S.C. 102(b) as being anticipated by Kubo (EP 0989290 A2).

Claims 5 and 7 have been amended. New claims 9 to 14 have been added. Support is found at paragraphs [0022], [0024], [0026] and [0027], for example.

Reconsideration of the application based on the following remarks is respectfully requested.

Rejections under 102(b)

Claims 5 to 8 were rejected under 35 U.S.C. 102(b) as being anticipated by Arnold et al. (US 6,195,999 B1).

Arnold et al. discloses a storage tank 22 containing hydrogen-retention material which reversibly takes-up and stores hydrogen at a hydrogen-storage temperature and releases it as a gas upon heating to a release temperature. A fuel cell stack 12 uses the released hydrogen gas to produce electricity and heat by-product. Heat by-product is transferred from the fuel cell stack to the storage tank via a primary coolant flow circuit 32 that heats the hydrogen-retention material to release hydrogen for fueling the fuel cell stack 12. (See Col. 1, lines 39 to 48).

Claim 5, as amended, recites "[a] fuel cell system for mobile use comprising:

a fuel cell unit for generating electrical energy and fuel cell waste products;

a cooling circuit assigned to the fuel cell unit and having a heat exchanger downstream of the fuel cell unit;

an adsorption accumulator assigned to the fuel cell unit and forming a heat store adapted to release heat when adsorbing the fuel cell waste products, the adsorption accumulator being operatively thermally connected to the heat exchanger;

a first line connected to the fuel cell unit discharging the fuel cell waste products from the fuel cell unit; and

a second line connecting the first line to the adsorption accumulator for feeding the fuel cell waste products to the adsorption accumulator."

It is respectfully submitted that Arnold et al. does not disclose "an adsorption accumulator assigned to the fuel cell unit and forming a heat store adapted to release heat when adsorbing the fuel cell waste products" or "a second line connecting the first line to the adsorption accumulator feeding the fuel cell waste products to the adsorption accumulator" as now recited in claim 5. Storage tank 22 of Arnold et al. stores hydrogen and when storage tank 22 is heated to a release temperature, storage tank 22 provides hydrogen to fuel cell stack 12 for electricity generation. (Col. 3, lines 1 to 4). Waste products of fuel cell stack 12 of Arnold et al. are exhausted through lines 19, 21 and routed to heat generator 42, which combusts the gases to generate thermal energy. (Col. 3, line 63 to col. 4, line 5). Thus, storage tank 22 of Arnold et al. in no way forms "a heat store adapted to release heat when adsorbing the fuel cell waste products" as now required by claim 5. Also, because waste products of fuel cell stack 12 of Arnold et al. are not fed to storage tank 22, Arnold et al. does not disclose "a second line connecting the first line to the adsorption accumulator feeding the fuel cell waste products to the adsorption accumulator" as now required by claim 5. Because Arnold et al. does not disclose these limitations of claim 5, Arnold et al. cannot anticipate claim 5.

Furthermore, it is respectfully submitted that Arnold et al. does not disclose "a heat exchanger downstream of the fuel cell unit" as recited in claim 5. Electric heating element 40 of Arnold et al. electrically generates heat to begin heating storage tank 22 and initiate a start-up of the electrochemical engine 10 of Arnold et al. A heat exchanger, as clearly understood by one of skill in the art, is a device that transfers heat from one medium to another medium. Thus, because electric heating element 40 of Arnold et al. merely generates heat and does not exchange heat from one medium to another, Arnold et al. in no way discloses "a heat exchanger downstream of the fuel cell unit" as required by claim 5. This is another reason why Arnold et al. cannot anticipate claim 5.

Claim 7 includes the limitations of claim 5 that are discussed above, and therefore also cannot be anticipated by Arnold et al.

Withdrawal of the rejection under 35 U.S.C. 102(b) of claim 5, and claim 6 depending therefrom, and claim 7, and claim 8 depending therefrom, is respectfully requested.

Claims 5 and 7 were rejected under 35 U.S.C. 102(b) as being anticipated by Kubo (EP 0989290 A2).

Kubo discloses a hydrogen absorbing tank 1 containing a hydrogen absorbing alloy powder "connected to a hydrogen-oxygen fuel cell 2 and a radiator 3 by piping. Cooling water, that is, a heating medium, is circulated between the hydrogen absorbing tank 1, the fuel cell 2 and the radiator 3 by using valves and a circulating pump. During a normal power generating operation, heat generated by the fuel cell 2 is supplied to the hydrogen absorbing tank 1 in order to produce or release hydrogen gas from the hydrogen absorbing tank 1, and a surplus amount of heat is discharged through the radiator 3." (Paragraph [0026]).

Claim 5, as amended, recites "[a] fuel cell system for mobile use comprising:

a fuel cell unit for generating electrical energy and fuel cell waste products;

a cooling circuit assigned to the fuel cell unit and having a heat exchanger downstream of the fuel cell unit;

an adsorption accumulator assigned to the fuel cell unit and forming a heat store adapted to release heat when adsorbing the fuel cell waste products, the adsorption accumulator being operatively thermally connected to the heat exchanger;

a first line connected to the fuel cell unit discharging the fuel cell waste products from the fuel cell unit; and

a second line connecting the first line to the adsorption accumulator for feeding the fuel cell waste products to the adsorption accumulator."

Kubo does not disclose "an adsorption accumulator assigned to the fuel cell unit and forming a heat store adapted to release heat when adsorbing the fuel cell waste products" or "a second line connecting the first line to the adsorption accumulator feeding the fuel cell waste products to the adsorption accumulator" as now recited in claim 5. Hydrogen absorbing tank 1 of Kubo releases hydrogen to fuel cell 2 when heat generated by fuel cell 2 is supplied to hydrogen absorbing tank 1 of Kubo by circulating cooling water through piping. (Paragraph [0026]). Absorbing tank 1 of Kubo does not form "a heat store adapted to release heat when

adsorbing the fuel cell waste products" as now required by claim 5. Kubo in no way indicates that waste products of fuel cell 2 are adsorbed by absorbing tank 1 of Kubo and it is submitted that this would not be desirable as it would contaminate the hydrogen stored in absorbing tank 1 and supplied to fuel cell 2. Because Kubo does not disclose these limitations of claim 5, Kubo cannot anticipate claim 5.

Claim 7 includes the limitations of claim 5 that are discussed above, and therefore also cannot be anticipated by Kubo.

Withdrawal of the rejection under 35 U.S.C. 102(b) of claims 5 and 7 is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,
DAVIDSON, DAVIDSON & KAPPEL, LLC

By: _____

William C. Gehris (Reg. No. 38,156)

Davidson, Davidson & Kappel, LLC
485 Seventh Avenue, 14th Floor
New York, New York 10018
(212) 736-1940